

## POSITIVE JOINTS



COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAND THICKNESS				BAR AND STRAP (CSP ONLY)				ANGLE							
				CSP		CAP		CSP		CAP		STRAP THICKNESS	BOLTS	BAR DIA	BAR YIELD STRENGTH	DIMENSIONS		BOLTS		RIVETS		SPOT WELDS	
				CSP	CAP	CSP	CAP	CSP	CAP	CSP	CAP					CSP	CAP	CSP	CAP	CSP	CAP	CSP	CAP
HUGGER	68 mm x 13 mm (2 3/4" x 1/2")	THROUGH 1200 mm (48")	267 mm (10 1/2")	2.77 mm (0.109")				1.63 mm (0.064")				2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		1350 mm-1650 mm (54"-66")	267 mm (10 1/2")	2.77 mm (0.109")				1.63 mm (0.064")				DBL 2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		THROUGH 1350 mm (54")	267 mm (10 1/2")	1.63 mm-2.01 mm (0.064"-0.079")				1.63 mm (0.064")				2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		THROUGH 1500 mm (60")	267 mm (10 1/2")	3.51 mm (0.138")				2.01 mm (0.079")				DBL 2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		1650 mm-1800 mm (66"-72")	267 mm (10 1/2")	3.51 mm (0.138")				2.77 mm (0.109")				DBL 2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		THROUGH 1800 mm (72")	267 mm (10 1/2")	4.27 mm (0.168")				2.77 mm (0.109")				DBL 2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	310 mm (45")								
		1200 mm-2100 mm (48"-84")	267 mm (10 1/2")	2.77 mm (0.109")				2.01 mm (0.079")				DBL 2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		1620 mm-2250 mm (64"-90")	267 mm (10 1/2")	1.63 mm-2.01 mm (0.064"-0.079")				1.63 mm (0.064")				DBL 2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		2400 mm-2550 mm (96"-102")	267 mm (10 1/2")	2.01 mm (0.079")				2.01 mm (0.079")				DBL 2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		2250 mm-3000 mm (90"-120")	267 mm (10 1/2")	2.77 mm (0.109")				2.77 mm (0.109")				DBL 2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	310 mm (45")								
HAT BAND	68 mm x 13 mm (2 3/4" x 1/2")	300 mm-750 mm (12"-30")	70 mm (2 3/4")	1.63 mm-2.01 mm (0.064"-0.079")				1.63 mm (0.064")								64 mm x 38 mm x 4.8 mm (2 1/2" x 1 1/2" x 3/8")	1-13 mm (1-1/2")					3-15 mm (3-1/2")	
		900 mm-1200 mm (36"-48")	70 mm (2 3/4")	1.63 mm (0.064")				1.63 mm (0.064")								64 mm x 38 mm x 4.8 mm (2 1/2" x 1 1/2" x 3/8")	1-13 mm (1-1/2")	3-12.7 mm (3-1/2")				3-15 mm (3-1/2")	
		900 mm-1200 mm (36"-48")	70 mm (2 3/4")	2.01 mm (0.079")				2.01 mm (0.079")				2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								
		THROUGH 1050 mm (42")	70 mm (2 3/4")	2.77 mm (0.109")				2.01 mm (0.079")				2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")	220 mm (32")								

## DOWNDRAIN

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAND THICKNESS				BAR AND STRAP (CSP ONLY)				ANGLE							
				CSP		CAP		CSP		CAP		STRAP THICKNESS	BOLTS	BAR DIA		DIMENSIONS		BOLTS		RIVETS		SPOT WELDS	
				CSP	CAP	CSP	CAP	CSP	CAP	CSP	CAP					CSP	CAP	CSP	CAP	CSP	CAP	CSP	CAP
TWO PIECE INTEGRAL FLANGE	38 mm x 6.5 mm (1 1/2" x 1/4")	150 mm (6")	178 mm (7")	1.63 mm (0.064")				1.52 mm (0.060")										3-10 mm (3-3/8")					
		200 mm-250 mm (8"-10")	178 mm (7")	1.63 mm (0.064")	1.52 mm (0.060")	1.63 mm (0.064")	1.52 mm (0.060")											3-10 mm (3-3/8")	3-10 mm (3-3/8")				
ANNULAR	68 mm x 13 mm (2 3/4" x 1/2")	THROUGH 600 mm (24")	305 mm (12")	1.63 mm (0.064")	1.52 mm (0.060")	1.63 mm (0.064")	1.52 mm (0.060")									51 mm x 51 mm x 4.8 mm (2" x 2" x 3/8")	51 mm x 51 mm x 4.8 mm (2" x 2" x 3/8")	3-13 mm (3-1/2")	3-13 mm (3-1/2")	3-9.5 mm (3-3/8")	3-9.5 mm (3-3/8")	3-15 mm (3-1/2")	
		THROUGH 600 mm (24")	267 mm (10 1/2")	1.63 mm (0.064")				1.63 mm (0.064")				2.01 mm (0.079")	13 mm (1/2")	22 mm (7/8")		51 mm x 51 mm x 4.8 mm (2" x 2" x 3/8")	51 mm x 51 mm x 4.8 mm (2" x 2" x 3/8")	3-13 mm (3-1/2")	3-13 mm (3-1/2")	3-9.5 mm (3-3/8")	3-9.5 mm (3-3/8")	3-15 mm (3-1/2")	

## NOTES:

- All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
- For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
- Tension straps may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
- Use 32 mm (1 1/4") gage line dimension on attached angle leg for rivets and spot welds.
- Band thickness shall not be less than:
  - 3 standard thickness lighter than the thickness of the pipe for corrugated steel pipe.
  - 2 standard thickness lighter than the thickness of the pipe and in no case lighter than 1.5 mm (0.060") for corrugated aluminum pipe.
- Dimensions, thickness and strengths shown are minimum.
- For pipe arches use same width band as for round pipe of equal periphery.
- Fillet welds of equivalent strength may be substituted for spot welds or rivets.
- Spot welds shall develop minimum required strength of strap.
- Pipe with rerolled ends having at least two 68 mm x 13 mm (2 3/4" x 1/2") annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 68 mm x 13 mm (2 3/4" x 1/2") corrugations.
- Two piece bands are required for pipes greater than 1050 mm (42") diameter.
- For downdrain applications, two piece integral flange couplers shall have factory applied sleeve type rubber gaskets with a minimum length of 175 mm (7") measured along the length of the pipe.

DIST	COUNTY	ROUTE	KILOMETER TOTAL PROJECT	POST NO.	SHEET NO.	TOTAL SHEETS
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STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CORRUGATED METAL PIPE  
COUPLING DETAILS NO. 7  
POSITIVE JOINTS AND  
DOWNDRAINS**

These "Standard Plans for Construction of Local Streets and Roads" contain units in two systems of measurement: International System of Units (SI or "metric") and United States Standard Measures shown in the parentheses ( ). The measurements expressed in the two systems are not necessarily equal or interchangeable. See the "Foreword" at the beginning of this publication.

NO SCALE

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